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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Martinus Bernardus Van Der Mark

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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BRIARCLIFF MANOR, NY 10510

EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT

PAPER NUMBER

2627

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03/04/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,991	Applicant(s) VAN DER MARK ET AL.	
	Examiner Nathan A. Danielsen	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/29/07</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-12 are pending.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Note that some of the references, e.g. WO 2004/008444-A2, have been cited in the Information Disclosure Statement filed 29 August 2007. However, other references, such as that to Martin van der Mark and Gavin Phillips entitled "(Squeaky clean) Hydrophobic disk and objective", have not been cited in the Information Disclosure Statement filed 29 August 2007 and copies of these references have not been placed of record.

4. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of:

- (1) each foreign patent;
- (2) each publication or that portion which caused it to be listed;
- (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and
- (4) all other information, or that portion which caused it to be listed.

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In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

5. Figures 1A, 1B, 2A, 2B, 3, 4, 5, and 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

- a. Regarding figures 1A and 1B, the term "typical" on page 1, line 16, in combination with the equations on page 1, lines 16-21, with those same equations being found in figures 1A and 1B, as well as the term "normal" on page 7, lines 19 and 20, indicate that figures 1A and 1B are "prior art";
- b. Regarding figures 2A and 2B, the phrase "another proposed method" on page 2, line 3, in combination with the remainder of the paragraph on page 2, lines 3-12, and the suggested comparison between figures 1B and 2A, indicate that figures 2A and 2B are "prior art";
- c. Regarding figure 3, the reference to figure 3 to explain figure 2B (see page 2, lines 20-22) indicates that figure 3 is "prior art";
- d. Regarding figure 4, the phrase "Fig. 4 shows a measurement (taken from Ref. [1])" on page 3, line 6, in combination with the date associated with Ref. [1] on page 13, lines 3-5, indicate that figure 4 is "prior art";
- e. Regarding figure 5, the discussion of thickness variations on page 4, line 24 through page 5, line 1, indicates that figure 5 is "prior art"; and

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- f. Regarding figure 6, the phrase "see for example fig. 6 and Refs. [6] and [7]" on page 4, line 34 and page 5, line 1, in combination with the dates of Refs. [6] and [7] on page 13, lines 18-23, indicates that figure 6 is "prior art".
6. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because it lacks appropriate section headings (note the following). Appropriate correction is required.
8. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

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(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

g. Regarding claims 7 and 8, the term "e.g.", which is short for "for example", renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

h. Claims 9-12 are rejected as being indefinite due to their dependence, either directly or indirectly, from an indefinite claim.

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Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al (US Patent 6,307,689; hereinafter Ichimura '689), in view of Saito et al (US Patent Application Publication 2003/0003261; hereinafter Saito '261), and further in view of Matsui (US Patent Application Publication 2002/0136147).

Regarding claims 1 and 2, Ichimura '689 discloses an optical data storage system for recording and/or reading, using a radiation beam having a wavelength λ , focused onto a data storage layer of an optical data storage medium (figures 5 and 6 and abstract), said system comprising:

the medium (element 51 in figures 5 and 6),

an optical head, including an objective having a numerical aperture NA (element 12 in figure 5 including the structure of figure 3 and col. 6, lines 58-67),

said objective including a solid immersion lens that is adapted for being present at a free working distance of smaller than $\lambda/10$ from an outermost surface of said medium and arranged on the cover layer side of said optical data storage medium (col. 6, lines 58-67; where the preferred air gap is approximately 50 nm, which is 7.8% (and less than $\lambda/10$) of the disclosed irradiation wavelength of 640 nm), and

said objective including a solid immersion lens (element 3 in figure 3 and col. 6, lines 58-67).

However, Ichimura '689 fails to disclose a cover layer or the details thereof.

In the same field of endeavor, Saito '261 discloses where:

the medium has a cover layer that is transparent to the focused radiation beam (¶s 59-61; where element 50 in the figure meets the following definitions of "transparent" found at

<http://www.merriam-webster.com/dictionary/transparent>: "having the property of

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transmitting light without appreciable scattering so that bodies lying beyond are seen clearly” and “allowing the passage of a specified form of radiation (as X-rays or ultraviolet light”),

said cover layer having a thickness h smaller than $5\text{ }\mu\text{m}$ (§ 61; where, even though Saito’s range of cover layer thicknesses is between 0.005 mm and 1.000 mm , ($5\text{ }\mu\text{m}$ to $1000\text{ }\mu\text{m}$), the claimed thickness variation extends the claimed range to slightly greater than $5\text{ }\mu\text{m}$, thus the range of Saito overlaps and renders obvious applicant’s claimed range (h is less than $5\text{ }\mu\text{m} + 50\text{ nm}$, meaning h must be less than $5.00005\text{ }\mu\text{m}$, which is greater than 0.005 mm) (see *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990)), and characterized in that the thickness variation Δh of the cover layer over the whole medium is smaller than 50 nm , preferably smaller than 20 nm (§ 60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the medium of Ichimura ‘689 with that of Saito ‘261, for the purpose of improving the recording characteristics of a recording medium (§§ 9-11). However, Saito ‘261 also fails to disclose where the focused radiation beam is coupled by evanescent wave coupling from said solid immersion lens into the cover layer of the optical data storage medium during recording/reading.

In the same field of endeavor, Matsui discloses where the focused radiation beam is coupled by evanescent wave coupling from said solid immersion lens into the cover layer of the optical data storage medium during recording/reading (§ 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Ichimura ‘689, as modified by Saito ‘261, with that of Matsui, for the purpose of increasing the data storage capacity of an optical recording medium (§ 19).

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13. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura '689, in view of Saito '261 and Matsui, and further in view of Baartman et al (US Patent 6,310,840; hereinafter Baartman).

Regarding claims 3 and 4, Ichimura '689, in view of Saito '261 and Matsui, discloses everything claimed, as applied to claim 1. However, Ichimura '689, in view of Saito '261 and Matsui, fails to disclose the various means for moving the elements in the objective.

In the same field of endeavor, Baartman discloses where the optical head comprises:

a first adjustable optical element corresponding to the solid immersion lens (element 57 in figure 2 and col. 6, lines 20-65),

means for axially moving the first optical element in order to keep the distance between cover layer and solid immersion lens dynamically constant (element 51 in figure 2 and col. 6, lines 20-65),

a second adjustable optical element (element 61 in figure 2 and col. 6, line 66 through col. 7, line 31),

means for adjusting the second optical element in order to change, with a low bandwidth, the position of the focal point of the focused radiation beam relative to an exit surface of the solid immersion lens (element 63 in figure 2 and col. 6, line 66 through col. 7, line 31), wherein the second optical element is present in the objective (elements 53 and 61 in figures 2 and 3) and

wherein the second optical element is axially movable with respect to the first optical element (col. 6, line 66 through col. 7, line 31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Ichimura '689, as modified by Saito '261 and Matsui, with that of Baartman, for the purpose of reducing the power required to maintain a proper focus condition on the surface of an optical recording medium (col. 1, line 61 through col. 2, line 8).

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Regarding claim 5, Ichimura '689, in view of Saito '261, Matsui, and Baartman, discloses everything claimed, as applied to claim 3. However, Ichimura '689, in view of Saito '261, fails to disclose where the second optical element is present outside the objective.

In the same field of endeavor, Matsui discloses where the second optical element is present outside the objective (element 5 in figure 2; note where the second optical element in claim 3 is not claimed as an objective lens per se).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Ichimura '689, as modified by Saito '261, with that of Matsui, for the purpose of increasing the data storage capacity of an optical recording medium (§ 19).

14. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura '689, in view of Saito '261, Matsui, and Baartman, and further in view of Ichimura (US Patent Application Publication 6,324,133; hereinafter Ichimura '133) and Saito et al (US Patent Application Publication 2004/0145995; hereinafter Saito '995).

Note that, although claim 8 looks like "an independent claim, drafted in a short-hand format to avoid rewriting the particulars" of claims 1 and 3, it has been treated as a proper dependent claim pursuant to Ex parte Porter, 25 USPQ2d 1144, 1147 (Bd. of Pat. App. & Inter. 1992) since it is narrower in scope and incorporates by reference all of the subject matter of claims 1 and 3.

Regarding claim 8, Ichimura '689, in view of Saito '261, Matsui, and Baartman, discloses everything claimed, as applied to claim 3. However, Ichimura '689, in view of Saito '261 and Matsui, fails to disclose the details of a method of optical recording and/or reading with a system as claimed in claim 3.

In the same field of endeavor, Baartman discloses a method of optical recording and/or reading with a system as claimed in claim 3, wherein:

the free working distance is kept constant by using a first, high bandwidth servo loop (col. 7, line 65 through col. 8, line 62),

the first optical element is actuated based on the first servo loop (col. 7, line 65 through col. 8, line 62),

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a second, low bandwidth servo loop is active based on a focus control signal (col. 7, line 65 through col. 8, line 62),

the second optical element is adjusted based on the second servo loop in order to retrieve an optimal modulated signal (col. 7, line 65 through col. 8, line 62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus/method of Ichimura '689, as modified by Saito '261 and Matsui, with that of Baartman, for the purpose of reducing the power required to maintain a proper focus condition on the surface of an optical recording medium (col. 1, line 61 through col. 2, line 8). However, Baartman fails to disclose where the first, high bandwidth servo loop is based on a gap error signal, e.g. derived from the amount of evanescent coupling between the solid immersion lens and the cover layer, and where the second servo loop is active based on a focus control signal derived from the modulation depth of a modulated signal recorded in the data storage layer.

In the same field of endeavor, Ichimura '133 discloses where the second servo loop is active based on a focus control signal derived from the modulation depth of a modulated signal recorded in the data storage layer (col. 9, line 8 through col. 10, line 35 and figures 5 and 6; where the focus control signal is the focus offset derived by the method of figure 6, where the envelope of the RF signal is dependent on the modulation depth in that the modulation depth produces a reflected signal which oscillates between low and high levels, and where the high and low envelopes shown in figure 5B show the oscillations in these high and low levels, respectively).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus and functionality thereof of Ichimura '689, as modified by Saito '261, Matsui, and Baartman, with that of Ichimura '133, for the purpose of quickly optimizing the distance between an objective lens and a solid immersion lens (col. 2, lines 23-31). However, Ichimura '133 also fails to disclose where the first, high bandwidth servo loop is based on a gap error signal, e.g. derived from the amount of evanescent coupling between the solid immersion lens and the cover layer.

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In the same field of endeavor, Saito '995 discloses where the first, high bandwidth servo loop is based on a gap error signal, e.g. derived from the amount of evanescent coupling between the solid immersion lens and the cover layer (§ 97).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus and functionality thereof of Ichimura '689, in view of Saito '261, Matsui, Baartman, and Ichimura '133, with that of Saito '995, for the purpose of servo-controlling the distance between an optical recording medium and a solid immersion lens (§ 97).

Regarding claims 9 and 10, Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, discloses everything claimed, as applied to claim 8. However, Ichimura '689, in view of Saito '261, Matsui, and Baartman, fails to disclose where an oscillation is superimposed on the adjustment of the second optical element and wherein the focus control signal additionally is derived from the oscillation direction of the second optical element.

In the same field of endeavor, Ichimura '133 discloses where an oscillation is superimposed on the adjustment of the second optical element (col. 7, line 60 through col. 8, line 8 and figure 6) and wherein the focus control signal additionally is derived from the oscillation direction of the second optical element (col. 9, line 8 through col. 10, line 35 and figures 5 and 6; where the applied sine waveform causes the high and low envelopes of the RF signal to fluctuate, thus allowing for the optimization of the distance between the objective lens and the solid immersion lens), and wherein the modulated signal is recorded as recorded data in the optical data storage medium (suggested by "a bit portion which has previously been recorded" in col. 11, lines 10-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus and functionality thereof of Ichimura '689, as modified by Saito '261, Matsui, and Baartman, with that of Ichimura '133, for the purpose of quickly optimizing the distance between an objective lens and a solid immersion lens (col. 2, lines 23-31).

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15. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, and further in view of Tsukamoto (US Patent Application Publication 2002/0141316).

Regarding claim 11, Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, discloses everything claimed, as applied to claim 7. However, Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, fails to disclose where the modulated signal is present in a lead-in area of the optical data storage medium. Although Ichimura '133 implies where "a bit portion [of a recordable optical disk] which has previously been embossed" can be used (which one of ordinary skill in the art would have known includes a lead-in area), Ichimura '133 fails to explicitly disclose where this embossed area is a lead-in area.

In the same field of endeavor, Tsukamoto discloses where the modulated signal is present in a lead-in area of the optical data storage medium (¶s 135 and 139).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus and functionality thereof of Ichimura '689, as modified by Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, with that of Tsukamoto, for the purpose of reproducing various (control) data from a recordable optical medium (¶ 135).

Regarding claim 12, Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, discloses everything claimed, as applied to claim 7. However, Ichimura '689, in view of Saito '261, Matsui, Baartman, Ichimura '133, and Saito '995, fails to disclose where the modulated signal is present as a wobbled track of the optical data storage medium. Although Ichimura '133 implies where "a recorded signal portion [of a recordable optical disk]" can be used (which one of ordinary skill in the art would have known includes a wobbled track), Ichimura '133 fails to explicitly disclose where this recorded signal portion is a wobbled track.

In the same field of endeavor, Tsukamoto discloses where the modulated signal is present as a wobbled track of the optical data storage medium (¶s 135 and 139).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus and functionality thereof of Ichimura '689, as modified by Saito

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'261, Matsui, Baartman, Ichimura '133, and Saito '995, with that of Tsukamoto, for the purpose of reproducing various (control) data from a recordable optical medium (¶ 135).

Double Patenting

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 1-7 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 9-12 of copending Application No. 10/599,992 in view of Saito '261.

Regarding claims 1 and 2, 10/599,992 claims in claim 1 everything in claims 1 and 2 of the instant application except the details of the thickness of the cover layer.

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In the same field of endeavor, Saito '261 discloses where:

said cover layer having a thickness h smaller than $5\text{ }\mu\text{m}$ (§ 61; see the explanation), and characterized in that the thickness variation Δh of the cover layer over the whole medium is smaller than 50 nm , preferably smaller than 20 nm (§ 60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the medium of Ichimura '689 with that of Saito '261, for the purpose of improving the recording characteristics of a recording medium (§s 9-11).

Regarding claim 3, 10/599,992, in view of Saito '261, teaches everything claimed, as applied to claim 1. Additionally, 10/599,992 claims in claim 1 the details of claim 3 of the instant application.

Regarding claims 4-7, 10/599,992, in view of Saito '261, teaches everything claimed, as applied to claim 1. Additionally, 10/599,992 claims in claims 2-5 the details of claims 4-7 of the instant application, respectively.

This is a provisional obviousness-type double patenting rejection.

18. Claims 8-12 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 9-12 of copending Application No. 10/599,992 in view of Saito '261, and further in view of Baartman.

Regarding claim 8, 10/599,992, in view of Saito '261, teaches everything claimed, as applied to claim 3. Additionally, 10/599,992 claims in claims 6 and 7 the details of claim 8 except for the bandwidths of the servo loops. Saito '261 also fails to disclose the bandwidths of the servo loops.

In the same field of endeavor, Baartman discloses the use of a first, high bandwidth servo loop and a second, low bandwidth servo loop (col. 7, line 65 through col. 8, line 62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of 10/599,992, as modified by Saito '261, with that of Baartman, for the purpose of reducing the power required to maintain a proper focus condition on the surface of an optical recording medium (col. 1, line 61 through col. 2, line 8).

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Regarding claims 9-12, 10/599,992, in view of Saito '261 and Baartman, teaches everything claimed, as applied to claim 8. Additionally, 10/599,992 claims in claims 9-12 the details of claims 9-12, respectively, of the instant application.

This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

19. Claim 7 would be allowable:

- i. if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, forth in this Office action; and
- j. if rewritten to overcome the double patenting rejection set forth in this Office action or upon the filing of an acceptable terminal disclaimer disclaiming the terminal portion of any patent granted on copending application 10/599,992; and
- k. if rewritten to include all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, either alone or in combination, fails to teach or fairly suggest, in claim 5, "wherein the second optical element has a focal length which is electrically adjustable", in combination with all the limitations found in claims 1 and 2.

Relevant Prior Art

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- I. Matsui and Feenstra et al (International Patent Application Publication WO 03/069380; hereinafter Feenstra) disclose optical recording/reproducing apparatuses which utilize a liquid crystal element to adjust the focal position/depth. However, Matsui and Feenstra fail to disclose where this liquid crystal element is located in the objective along with a solid immersion lens.

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Closing Remarks/Comments

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A. Danielsen whose telephone number is (571)272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan A. Danielsen/
Examiner, Art Unit 2627
02/25/2010